

CLAIMS:

1. (Currently amended) An isolated and purified α -N-acetyl-D-galactosaminidase from *Clostridium perfringens* and homologs thereof having at least 90% homology to the sequences set forth in SEQ ID Nos: 1-10.

2. (Original) The isolated and purified α -N-acetyl-D-galactosaminidase from *Clostridium perfringens* as set forth in claim 1 further characterized by being a homogenous preparation and having protease activity below detectable limits.

3. (Original) The isolated and purified α -N-acetyl-D-galactosaminidase from *Clostridium perfringens* as set forth in claim 2 further characterized by

a) having a molecular weight of approximately 72.1kDa by SDS-PAGE and approximately 57.5 kDa by molecular sieve chromatography;

b) being homogenous by SDS-Page;

c) having specific activity of approximately 40.54 U mg⁻¹ min⁻¹ using PNP-N-acetyl- α -D-galactosaminide as a substrate and BSA as a protein standard in a BioRad Protein assay; and

d) having an approximate pH optimum of 6.5 to 7.0.

4. (Currently amended) The isolated and purified α -N-acetyl-D-galactosaminidase from *Clostridium perfringens* according to claim 1, wherein said α -N-acetyl-D-galactosaminidase has a sequence selected from the group consisting essentially of SEQ ID Nos: ~~1, and 8-16~~ 1-10.

5. (Currently amended) A method for removing neuramidases from α -N-acetyl galactosaminidase isolated from *Clostridium perfringens* thereby isolating and purifying α -N-acetyl-D-galactosaminidase from *Clostridium perfringens*.

6. (Currently amended) The method as set forth in claim ~~2~~ 5 wherein the removal step further includes the removal of other impurities.

7. (Currently amended) A process for altering erythrocytes by using the α -N-acetyl-D-galactosaminidase isolated from *Clostridium perfringens* or homologs thereof according to claim 1 in altering erythrocytes to type O blood cells.

8. (Original) The process as set forth in claim 7, wherein said altering step further includes degrading the type A blood cells thereby creating the type O blood cells.

9. (Original) A recombinant α -N-acetyl-D-galactosaminidase as set forth in SEQ ID No:1 and 8-15 and functional analogs thereof.

10. (Currently amended) An antibody for testing the purity of the α -N-acetylgalactosaminidase isolated from *Clostridium perfringens* according to claim 1.

11. (Currently amended) A process for altering cells expressing blood group A epitope by using the α -N-acetylgalactosaminidase isolated from *Clostridium perfringens* according to claim 1 in altering the cells expressing blood group A epitope to cells expressing blood group O epitope.

12. (Currently amended) A process for altering cells expressing blood group A epitope by using the α -N-acetylgalactosaminidase isolated from *Clostridium perfringens* according to claim 1 in altering the cells expressing blood group A epitope to cells expressing blood group B epitope.